

## SAFETY DATA SHEET

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifiers

Product Name: 2,2,2-Trifluoroacetaldehyde hydrate  
 CAS Number: 421-53-4  
 Catalog number: A825792

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against.

Identified uses: For laboratory or manufacturing use only, not for drug, food and household use.

#### 1.3 Details of the supplier of the safety data sheet

Amadis Chemical Company Limited  
 No.99 Housheng Street, Gongshu District,  
 310015, Hangzhou, Zhejiang, P.R. China  
 Tel: 0086-571-89925085 / Fax: 0086-571-89925065

#### 1.4 Emergency telephone number

Emergency Phone: 0086-571-89925085

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification according to Regulation (EC) No 1272/2008

|   |      |
|---|------|
| Flammable liquids (Category 2)                  | H225 |
| Acute toxicity, oral (Category 4)               | H302 |
| Skin corrosion/irritation (Category 2)          | H315 |
| Sensitisation, Skin (Category 1)                | H317 |
| Serious eye damage/eye irritation (Category 2A) | H319 |

#### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly Flammable liquid and vapour  
 H302 Harmful if swallowed  
 H315 Causes skin irritation  
 H317 May cause an allergic skin reaction  
 H319 Causes serious eye irritation

Precautionary statement(s)

|                          |   |
|--------------------------|---|
| P210                     | Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  |
| P233                     | Keep container tightly closed.  |
| P240                     | Ground/bond container and receiving equipment.  |
| P241+P242+P243           | Use explosion-proof electrical/ventilating/lighting/.../equipment.<br>Use only non-sparking tools.<br>Take precautionary measures against static discharge. |
| P261                     | Avoid breathing dust/fume/gas/mist/vapours/spray.   |
| P264                     | Wash hands thoroughly after handling.   |
| P270                     | Do not eat, drink or smoke when using this product.   |
| P272                     | Contaminated work clothing should not be allowed out of the workplace.  |
| P280                     | Wear protective gloves/protective clothing/eye protection/face protection.  |
| P301+P312+P330           | IF SWALLOWED:<br>Call a POISON CENTER or doctor/physician if you feel unwell.<br>Rinse mouth.   |
| P302+P352+P333+P313+P363 | Wash with plenty of soap and water.<br>If skin irritation or rash occurs:<br>Get medical advice/attention.<br>Wash contaminated clothing before reuse.      |

P305+P351+P338+P337+P313 IF IN EYES:

Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists:

Get medical advice/attention.

P403+P235

Store in a well-ventilated place. Keep cool.

P501

Dispose of contents/container to.....

## 2.3 Other hazards

None

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms : 2,2,2-trifluoroethane-1,1-diol;2,2,2-Trifluoro-1,1-ethanediol;2,2,2-trifluoroethanediol;fluoral hydrate

Formula : C<sub>2</sub>H<sub>3</sub>F<sub>3</sub>O<sub>2</sub>

Molecular weight : 116.04

CAS-No. : 421-53-4

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), silicon oxides

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas.

For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Normal measures for preventive fire protection.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Moisture sensitive. Store under nitrogen.

Storage class (TRGS 510): Combustible liquids not in Storage Class 3

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

##### Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

##### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN14387) respirator cartridges as a backup to enginee protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Control of environmental exposure

Do not let product enter drains.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|   |                                  |
|---|----------------------------------|
| Appearance                                      | Colorless to light yellow liquid |
| b) Odour  | No data available                |
| c) Odour Threshold                              | No data available                |
| d) pH   | No data available                |
| e) Melting point/freezing point                 | 69-70°C                          |
| f) Initial boiling point and boiling range      | 104-106°C                        |
| g) Flash point                                  | 104-106°C                        |
| h) Evaporation rate                             | No data available                |
| i) Flammability (solid, gas)                    | No data available                |
| j) Upper/lower flammability or explosive limits | No data available                |
| j) Upper/lower flammability or explosive limits | No data available                |
| k) Vapour pressure                              | No data available                |
| l) Vapour density                               | No data available                |
| m) Relative density                             | 1.4 g/cm <sup>3</sup>            |
| n) Water solubility                             | No data available                |
| o) Partition coefficient: noctanol/water        | No data available                |
| p) Auto-ignition temperature                    | No data available                |
| q) Decomposition temperature                    | No data available                |
| r) Viscosity                                    | No data available                |

s) Explosive properties

No data available

t) Oxidizing properties

No data available

## 9.2 Other safety information

No data available

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Acids, Bases, Alcohols, Strong oxidizing agents, Material generates methanol on contact with water or moisture

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), silicon oxides  
Other decomposition products - No data available  
In the event of fire: see section 5

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

#### Specific target organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available

#### Additional Information

RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Material may form a siloxane polymer on the skin, eyes, or in the lungs. If tissues, seek medical attention.

## SECTION 12: Ecological information

### 12.1 Toxicity

No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

## 12.6 Other adverse effects

No data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 1989

IMDG: 1989

IATA:1989

### 14.2 UN proper shipping name

ADR/RID: 2,2,2-Trifluoroacetaldehyde hydrate

IMDG: 2,2,2-Trifluoroacetaldehyde hydrate

IATA: 2,2,2-Trifluoroacetaldehyde hydrate

### 14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA:3

### 14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

### 14.5 Environmental hazards

ADR/RID:

IMDG Marine pollutant:

### 14.6 Special precautions for user

No data available

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

### 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

## SECTION 16: Other information

### Full text of H-Statements referred to under sections 2 and 3.

H225 Highly Flammable liquid and vapour

H302 Harmful if swallowed

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H319 Causes serious eye irritation

### Further information

Copyright 2018 Amadis Chemical Company Limited. License granted to make unlimited paper copies for internal use only.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

Amadis Chemical Company Limited shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.amadischem.com](http://www.amadischem.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Update Date: 2022.04.12